

faction is evaluated by the Quebec User Evaluation of Satisfaction with assistive Technology (QUEST). The improvement of gait and stability are evaluated by a numerical scale (0 to 100).

Results.— Fifty-three patients were included. The mean satisfaction for this assistive technology was higher than 3/5 for 11 of the 12 items of the QUEST. Only the item “size” was rated lower than 3/5. The self-assessment of the improvement of gait and stability were respectively 6.9 ± 2.3 and 5.7 ± 2.6 .

Conclusion.— Patients were satisfied with this device. A prospective and instrumental evaluation of gait should be conducted.

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Effects of therapeutic shoes on plantar pressure distribution on healthy subjects

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Keywords: Diabetes; Prevention; Therapeutic shoe; Foot orthoses; Plantar pressure

Background.— Diabetes mellitus induces excessively high pressures under the foot when walking, especially at the forefoot where ulcers usually appear. To prevent ulceration, therapeutic shoes have been recommended. The aim of the present study was to investigate the effect of asymmetrical therapeutic shoe with and without flat or thermo-moulded orthoses on the plantar pressure distribution of healthy subjects.

Methods.— Ten participants, 6 women and 4 men performed 3 min walking wearing in a random order the same basic sport shoes (REF), one basic shoe and one therapeutic shoe alone (TS), with the MODUS flat plantar orthosis (MOD) and with a thermo-moulded orthosis (TO). Dynamic measurements of local pressure (Pedar system, Novel GmbH, Munich, Germany) of both feet were recorded (100 Hz) on three foot regions, forepart, medial part and heel.

Results.— Wearing the TS with orthosis decreased the maximum pressure peak (MPP) at the forepart. Opposite effect were noticed at heel level: increase of the MPP with flat orthosis ($P < 0.05$) and alleviation of pressure with TO ($P < 0.05$).

Discussion.— Significant reductions in plantar pressure can be achieved with footwear with a TO insole when compared with standard footwear, by increasing the total contact area.

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Use of GAITRite® device in everyday practice to assess orthopedic shoes for neurologic patients

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Keywords: Orthopedic shoes; Gait; GAITRite®

Objective.— Quantitative assessment of gait disorders on GAITRite® device.

disorders.

The patients made a return barefoot if possible then with orthopedic shoes. The following parameters were calculated on the average of two runs performed in each condition: speed walking pace, stride length, step width, single support length, double support length, functional ambulation profile (FAP). The results obtained when walking with orthopedic shoes were compared with trade boot or barefoot.

Results.— The analysis of gait parameters confirms the improvement obtained when walking with orthopedic shoes.

Conclusion.— The GAITRite® is reliable tool, simple and easy to use in everyday practice. It must be systematically used to assess orthopedic shoes.

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Posters

P455-e

Postural behavior in transfemoral and hip-disarticulated amputees

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Background.— Since balance is critical for functional independence, it could be useful to enhance knowledge on postural control in severely disabled amputees.

Method.— Three hip-disarticulated amputees (HD), 8 transfemoral amputees (TF), and 17 healthy controls were tested in upright standing and gait initiation tasks with a force plate.

Results.— In the standing task, HD were less stable than controls and HD's sound-limb was more loaded than the prosthesis. In the gait initiation task, the postural-adjustment phase was prolonged in HD compared to TF and controls, and HD exhibited difficulties for forward propulsion and body-weight shifting.

Discussion.— Results suggested that control of standing posture in HD was mainly dependent on the sound-limb and that loss of the physiological hip joint weakened the lateral stability. The higher lateral ground-reaction force at sound-limb toe-off revealed a Trendelenburg-like strategy for unipodal-stance on the prosthesis. As a consequence, to improve safety, initiating gait with the prosthesis, although lasting longer, should be preferred to the sound-limb first strategy. Balance training of HD should aim at increasing the ability to control medio-lateral and anteroposterior stability, in static and dynamic conditions, with a specific emphasis on lateral stability during exercises such as lateral body-weight transfer.

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P456-e

ARTbrace: Description and new concepts of scoliosis correction

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Keywords: Scoliosis; Orthosis; Brace; Description; Principles

Background.— The ARTbrace is a new brace: asymmetric, rigid in polycarbonate, torsion or untwisting scoliosis. Both hemi-shells are articulated on a posterior metal bar. Both anterior and inferior closures are rigid, the upper third is velcro strap.

Objective.— The aim was to achieve this brace in a simple untwisting process.

Results.— The first concept is the mathematical model of circled helicoid of the torso column with horizontal generating circle perpendicular to the axis. The external shape of the ARTbrace use this mathematical model to achieve